Fairgrounds Tour

1. Tour usually available early June-Labor Day.
2. Tour lasts: One hour and 30 minutes.
3. Distance walked: 1/2 mile, generally three stops in cave.
4. Stairs encountered: approximately 450, half up and half down, with a flight of 89 stairs up in a row (equivalent to 7 story building).
5. Tour size limit: 40 people.
6. Tour starts at elevator building, 225 yards from visitor center. Follow signs at bottom of stairs.

This is a general script. The information that the ranger presents may be in a slightly different order.

This tour through Wind Cave offers the longest walk through the cave and a view of the variety for which the cave is known. The tour passes through portions of both the middle and upper levels of the cave. Wind Cave is one of the most unusual caves on the planet. If it were similar to other caves, it probably would not have been included in the National Park System.

After orientation to the cave tour, the ranger will begin the journey by transporting 10 visitors at a time into the cave, by elevator, 19 stories down. If you are among the first people taken into the cave, please wait in the elevator airlock room while the ranger brings in the rest of the visitors. Please remember to stay away from the walls of the cave. Leaning on or touching the cave causes damage to it. This is especially important at the beginning and end of this particular tour since it is possible that groups may pass each other, often in narrow cave passageways.

The journey begins in the middle level of the cave. The passageways are generally small and variable in shape. Immediately after leaving the elevator landing, the group will pass through the flat-ceilinged Assembly Room, then follow a tall, narrow passageway that appears to be nothing more than a big crack. Indeed it is, most likely enlarged by the dissolving action of acid-rich groundwater. Geologists have noted very minor displacements of the rocks on either side of the passageway, indicating it was once a fault, now inactive.

All of the passageways in Wind Cave, whether big enough for a person to walk through or not, were likely formed by fracturing of limestone and dissolving by acid-rich water. This is typical of almost all caves. However, there is a difference when Wind Cave is compared with some other caves. Some caves are formed with the flowing water of an underground river. Generally, such caves may have fewer and larger passageways. Most geologists feel that the water that made Wind Cave remained standing for long periods of time. Many small cracks were dissolved to become numerous small passageways, giving Wind Cave the appearance of a giant sponge. As you travel through the cave, note the many side branches that take off from the paved and lighted trails. You may notice dozens, or even hundreds of other passages.

The first stop along the Fairgrounds route is the Temple. It is a large, high-ceilinged room dominated by boxwork and red and white colors. The group will stop on the stairway leading

up through the Temple, so please remember where your feet are positioned as you gaze around the room. Look at the boxwork on the ceiling. Have you ever seen such a cave feature before? You will see excellent examples of this most unusual speleothem on this tour. It is the uniqueness of boxwork and the complexity of the cave that makes Wind Cave special, worthy of national park status.

The origin of boxwork is not well understood. Over the years, geologists have developed different theories on the formation of this cave feature. Some geologists have modified their own theories or even completely changed their earlier opinions, after further study of the boxwork. The honeycomb pattern of boxwork developed because the surrounding limestone was intensely fractured. The fracturing may have occurred with chemical or physical alterations in the limestone or in blocks of gypsum (calcium sulfate) rocks included within the limestone. The fractures were later filled by calcite (calcium carbonate) crystals carried by groundwater. Still later, water of a different chemistry, perhaps the same acid-rich water that formed the cave passageways, etched away the limestone from between the crack fillings leaving these exposed in a network of boxes. Although the boxwork is very thin and delicate, and easily broken if touched, it was chemically stronger than the rock material that was washed away.

There is excellent boxwork exposed in the room just beyond the top of the Temple stairs. Be sure to look. Also, look for a change in the cave landscape over the next few minutes. After the Temple, the group will climb 89 stairs to the upper level of Wind Cave. The jagged and rough look of the boxwork covered cave will give way to smooth and domed passageways. The change will be obvious.

The walk from the Temple to the Fairgrounds room is long, almost 300 yards. Mostly, it is through the upper level of the cave. The domed and scalloped appearance of the passageways gives the illusion of water flow. If water flowed through this part of the cave, we would expect to find mud, silt, and rounded pebbles on the cave floor. However, we do not find these features, and we assume that the water that made the cave was standing or moved very slowly. One geologist has suggested that the combining of acid-rich groundwater and salt water from the ocean in which the limestone was deposited produced a highly corrosive mixture that readily dissolved the limestone into the shapes we see in the upper levels of the cave. Perhaps, it is only the lack of boxwork in this part of the cave that reveals the scalloped shapes.

The chemistries of the limestone are different enough, when upper and middle levels of the cave are compared, that boxwork formed only in certain places.

Another feature of the upper level of Wind Cave are extensive layers of chert. Chert is similar to flint, although not as grainy. Both are composed of silica. The rock is quite hard and resistant to the acid-rich water which carved the passageways. As result, one layer of chert has formed an extensive, almost flat ceiling. A change in ocean water temperature or chemistry at the time the limestone was being deposited altered the conditions enough to allow the precipitation of the silica.

When you reach the great Fairgrounds room, you will have the opportunity to sit on benches, in front of the Frostwork Ledge. The ledge contains outstanding examples of both popcorn and frostwork. Geologists believe these decorations form by a slow seepage of microscopic drops of water from tiny pores in the limestone. The drops of water lose their acidity to the cave air, and microscopic crystals of calcium carbonate are left.

Imagine a human being sweating on a hot day, leaving behind salt deposits on his or her skin. The process must have taken considerable time to build the clumps of popcorn and frostwork. You can well imagine how delicate these crystals are, and why we remain behind the handrail.

The Fairgrounds was so named, when discovered in 1892, because the explorers had decided that would be the name for the next room they found! In this room, the ranger may turn off the lights to demonstrate cave darkness for a few minutes. Please remain seated during the demonstration.

From the Fairgrounds, the group will descend three long stairways, once more entering the middle level of the cave. Some of the best boxwork is seen along this part of the trail.

The tour passes through its lowest point immediately after the last of the long downhill stairways. The ranger will stop here and make sure the group has kept together, and everyone has successfully negotiated the stairs.

By this time, you have seen enough of Wind Cave to realize how large, complex, and different it is. Its vastness and complexity attracts cave explorers who get special permits to "go where no one has gone before..." Explorers help us to learn about Wind Cave by making detailed maps and inventory reports as they go. Without the data they collect, the park staff could not make intelligent decisions about protecting this resource. If the Park Service is charged with managing this cave, we need to know what it contains, where it goes, and underneath what potential surface hazards it lies. This is the area in which cave explorers can help us.

This is a unique resource, like no other on planet earth. We want to conserve this natural wonder, keep it "unimpaired for the enjoyment of future generations". This is the mission of the National Park Service.

The journey is almost to its conclusion. In ten minutes you will reach the elevator. Please, do not be adventurous like the explorers who enter Wind Cave! Stay with the group; from here to the elevator there are numerous junctions with other paved and lighted trails.

We hope you have enjoyed your visit to Wind Cave.